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IN THIS ISSUE:

TYPICAL RESEARCH SERVICES of the Los Angeles County Division of Research and Guidance

Smallenburg • Harsh • Garlock • Metfessel • Bonsall
Thomson • Miklas • Wood • DiPietro

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THE EDITORS SAY:

The Role of the County Office Research Department

Each year hundreds of questions are directed to the office of the Los Angeles County Superintendent, and the staff attempts to provide answers to these inquiries. This issue of the *California Journal of Educational Research* is dedicated to illustrating the kinds of questions encountered and the methods of providing answers to these queries.

By glancing through the contents of this publication, a variety of topics can be noted. All of the topics, however, have two things in common. They arose from an inquiry, and a research approach appropriate for each question was used in reaching a solution. The staff desires that in perusing these articles the reader not only be aware of the results obtained, but he should also consider the research method employed in attempting to find an answer.

The challenge to a county research service lies in meeting the multiplicity of needs of school districts by offering consultant research services relating to administration, curriculum, and guidance. Service must be specific, concrete, prompt, efficient, and, of course, economical. These specifications when applied to both large and small districts are distinctly different in nature. For example, service to smaller districts includes assisting administrative personnel in securing answers to their problems and sometimes aiding district groups in carrying on research activities either by acting as resource people or providing specialized, technical assistance.

Larger cities, however, can be served better by other means. In these instances dissemination of information becomes an important function. This is accomplished through sharing of research methods or findings, maintaining a library of research studies, publicizing and publishing significant district research studies, cooperating with the Los Angeles Research Council, and by offering through institutes and allied guidance organizations services of special research resources.

In the years ahead the challenge for effective County Office research service may be even greater and perhaps more taxing or diversified. It is imperative that curriculum research activities be expanded. Additional mechanical equipment to process data must be secured. Findings of research studies must be more widely and quickly distributed. Cooperative endeavors and activities with the Los Angeles Research Council and universities and colleges must be increased. Only through greater effort can the Los Angeles County Office fulfill its vital role of conducting and coordinating research activities within a county.—Harry W. Smallenburg, Director of Research and Guidance, Los Angeles County.

A Comparative Study of Four Commonly Used Achievement Tests

J. C. Garlock and J. R. Harsh

In the fall of 1957, 21 school districts of Los Angeles County participated in a cooperative research program to compare the measurement obtained from the *California Achievement Tests,* 1957 Revision, the *SRA Achievement Battery,* the *Iowa Tests of Basic Skills,* and the *Sequential Tests of Educational Progress.* This report presents certain data related to the study.[1]

Nature of the Study

During the months of October and November 1957, the school districts cooperating in the study gave an experimental "achievement test" (a test which was not regularly or routinely administered as part of the district testing program), in addition to an achievement test which was a part of the district's regular survey testing. Each district agreed to administer the two tests within a period of three weeks. The tests were not consistently altered in order of administration.

Representatives from the four publishing houses—California Test Bureau,

[1]A complete mimeograph report of the findings of the first phase of this study may be obtained by directing a request to the authors.

Jerry C. Garlock is consultant in educational research for the Los Angeles County Schools. Before coming to this position two and a half years ago, Dr. Garlock taught in junior high, senior high, junior college, and adult schools in the Los Angeles area. He has also served as research engineer and mathematician for Airesearch and North American Aviation. Dr. Garlock, who obtained his doctor of philosophy degree in 1959 from the University of Southern California, is currently secretary of the California Educational Research and Guidance Association.

J. Richard Harsh has been Assistant Director of the Division of Research and Guidance, Los Angeles County Schools, for three years, after serving for ten years as consultant in that division. His previous experience includes that of lecturer at Occidental, Claremont, and Los Angeles State Colleges and the University of Southern California, clinical psychologist for the United States Army, Research Psychologist for the Army Air Force, and instructor at Occidental College. Mr. Harsh obtained his M.A. degree in 1948 from Occidental College.

Houghton-Mifflin Corporation, Educational Testing Service, and Science Research Associates—aided in designing and conducting this study. The four publishers also provided some materials to school districts which were unable to obtain copies of the instruments used in the special research project.

Since different districts were giving various combinations of the four achievement tests, the largest samples of student populations received two tests related to comparisons between the *California Achievement Tests* and the *Iowa Tests of Basic Skills;* the *California Achievement Tests* and the *SRA* (Science Research Associates) *Achievement Battery;* and the *California Achievement Tests* and the *Sequential Tests of Educational Progress.*

For this study, the majority of the districts participated with dual testing at the fifth, sixth, seventh, and eighth grades. The largest populations for comparative purposes were obtained for the fifth and sixth grades. Due to the time of administration, only the reading and arithmetic sections of these four achievement tests were used for this study.

The Los Angeles County Superintendent of Schools Office received the answer sheets from the tests, and the data from these answer sheets were scored and punched into IBM cards which gave the identification and age of the pupil, the total scholastic aptitude score, the reading raw score, the arithmetic raw score from the routine district testing, as well as the experimental testing. The data were then distributed and various statistical comparisons were made on the combinations of these four test batteries.

It is recognized that the sub-tests in reading and math of these four achievement batteries are not directly comparable. However, certain subtests have the same or similar names while others have items which are apparently similar in content.

The purpose of the study was to investigate the similarities and differences of the achievement tests, both in regard to emphasis and results; since it was recognized that there may have been differences in the assessments derived from the various tests. The comparison was not made to indicate which was the best test, for it was recognized that all of the test batteries were acceptable as technically sound.

Treatment of the Data

Each of the tests was analyzed in relation to the number of items in each sub-section of the tests as well as the descriptive statistics of the two tests derived from the same sample pupil population. For each test, the number of items in each sub-section of the test and the administration time limits were tabulated. An example of one comparison is given in Table I. (The raw scores, grade placements and percentiles for each test were compared by four reference points—the range of the scores, Q_1, median, and Q_3.) The descriptive statistics range, Q_1, median, and Q_3 were computed according

TABLE I

Number of Items and Administration Time Limits of Various Subtests for Grades 4, 5, and 6

Test	*n Number of Test Items*	*Time Limit*
CAT: Reading Vocabulary, Elem. Form AA	90	12
CAT: Reading Vocabulary, Elem. Form X	50	8
SRA: Reading Vocabulary, 4-6, Form A	50	A*
CAT: Reading Comprehension, Elem. Form AA	40	23
CAT: Reading Comprehension, Elem. Form X	70	40
SRA: Reading Comprehension, 4-6, Form A	50	B*
CAT: Arithmetic Reasoning, Elem. Form AA	45	16
CAT: Arithmetic Reasoning, Elem. Form X	45	16
SRA: Arithmetic Reasoning, 4-6, Form A	49	60
CAT: Arithmetic Fundamentals, Elem. Form AA	80	44
CAT: Arithmetic Fundamentals, Elem. Form X	80	42
SRA: Arithmetic Concepts, 4-6, Form A	20	C**
SRA: Arithmetic Computation, 4-6, Form A	44	D**

*A+B=65 minutes
**C+D=60 minutes

to raw scores, grade placements, and percentiles, and compared for each of the pairs of tests indicated above. An example of this comparison is given in Table II. It was felt that any complete analysis of extreme scores was unjustified because they are often extrapolated and tend to be spurious.

A further comparison dealt with the number of items that was involved in active measurement with this population. The mean minus the sigma in raw score units gave one comparison, while the mean and sigmas of the distributions gave a further comparison. The mean score divided by the number of items in the test proper gave a kind of difficulty index for each of the sub-sections of the tests. Comparisons of this type are exemplified by Table III. (Most of the comparisons which were made dealt with the means of the distribution and the dispersion of the score of one sigma above and below the mean.) Mean, sigmas, and probable errors for each sub-section of the tests were also compared as indicated in Table IV. These comparisons dealt with the raw scores actually obtained from the test as well as the normative grade placements and percentiles suggested by the test manuals. Correlations and standard errors of the "r" were computed for each of the tests compared. For the purposes of measurement characteristics, the Kuder-Richardson Formula 21 Reliability coefficients were computed as well as an analysis

TABLE II

Comparison of Two Achievement Tests with Respect to Range, Q_1, M_d, Q_3

Test	Number of Items	Raw Scores				Grade Placements				Percentiles			
		Range	Q_1	M_d	Q_3	Range	Q_1	M_d	Q_3	Range	Q_1	M_d	Q_3
ITBS:V: Vocabulary Form 1	43	1-42	12	17	26	2.9-9.3	4.3	4.9	6.0	1-99	22	43	70
CAT: Reading Voc. Elem. Form AA	90	27-87	51	63	74	2.2-8.7	3.6	4.6	5.7	1-99	12	30	61
ITBS:R: Reading Form 1	74	5-67	20	29.5	44	2.2-9.5	4.1	4.9	5.8	1-99	22	44	70
CAT: Read. Compr. Elem. Form AA	40	2-40	16	22	29	2.1-10.5	4.3	5.0	6.0	1-99	27	46	70
ITBS:A-1: Arith. Concepts, Form 1	42	1-36	11	15	20	2.2-7.1	4.2	4.8	5.4	1-99	24	39	65
CAT: Arith. Fund. Elem. Form AA	80	7-52	22	26	32	3.3-6.8	4.8	5.2	5.6	2-95	32	50	70
ITBS: A-2: Prob. Solving, Form 1	29	1-28	6	9	13	2.8-8.4	4.1	4.8	5.5	1-99	16	38	75
CAT: Arith. Reas. Elem. Form AA	45	3-27	18	24	30	2.4-7.4	4.4	5.0	6.0	1-96	24	42	77

5th Grade, N=241

TABLE III

Comparison of Variables for Two Achievement Tests

Test	N (Number of Pupils)	M — n	N (Number of Items)	M-SD (Raw Score)	M (Raw Score)	M+SD (Raw Score)	M-SD*	M*	M+SD*
CAT R.V. Elem. Form W	143	.57	50	17.0	28.3	39.6	4.1	5.6	7.1
CAT R.C. Elem. Form W	143	.53	70	23.7	37.4	51.2	3.8	5.3	6.9
STEP Reading Form 4A	143	.57	70	25.0	40.1	55.2	3.5	4.9	7.3
CAT A.R. Elem. Form W	143	.52	45	16.1	23.5	30.9	4.1	4.9	5.6
CAT A.F. Elem. Form W	143	.33	80	18.2	26.1	34.1	4.1	5.2	5.9
STEP Math Form 4A	143	.44	50	14.0	22.1	30.2	3.7	5.3	6.7
Grade 5									

*The values in this column are given in grade placements. These grade placements correspond to the raw scores of the previous M-SD, M, and M+SD columns as given in the test manual.

TABLE IV

Comparison Between Two Achievement Tests with Respect to Mean, SD, and PE

TEST	*Raw Score*			*Grade Placements*			*Percentiles*	
	Mean	*SD*	*PE*	*Mean*	*SD*	*PE*	*Median*	*Q*
CAT: Reading Comprehension Elementary Form AA	57.6	16.6	11.2	4.4	1.5	1.0	24	29
CAT: Reading Comprehension Elementary Form AA	21.2	7.8	6.4	5.0	1.2	.8	54	20
STEP: Reading Form 4A	37.4	14.4	9.7	5.0	2.0	1.3	40	24
CAT: Arithmetic Reasoning Elementary Form AA	20.6	7.5	5.1	4.8	1.0	.6	39	25
CAT: Arithmetic Fundamentals Elementary Form AA	23.4	7.8	5.3	4.9	.7	.5	47	24
STEP: Mathematics Form 4A	20.0	7.3	4.9	5.0	1.3	.9	41	19

Grade 5, N=436

TABLE V

Correlations Between CAT Elem. Form AA and ITBS Form I

TEST	*r*	SD_r	PE_r
ITBS Reading Vocabulary CAT Reading Vocabulary	.72	.03	.02
ITBS Reading Comprehension CAT Reading Comprehension	.80	.02	.02
ITBS Reading Vocabulary CAT Reading Comprehension	.76	.03	.02
ITBS Reading Comprehension CAT Reading Vocabulary	.75	.03	.02
A-1: ITBS Reading Concepts CAT Arithmetic Fundamentals	.37	.06	.04
A-2: ITBS Arithmetic Problem Solving CAT Arithmetic Reasoning	.63	.04	.03
A-1: ITBS Reading Concepts CAT Arithmetic Reasoning	.64	.04	.03
A-2: ITBS Arithmetic Problem Solving CAT Arithmetic Fundamentals	.61	.04	.03

Grade 5, N=241

of the lowest score made divided by the number of test items, the mean minus one standard deviation divided by the number of items, the means divided by the number of items, and the means plus one standard deviation divided by the number of items as well as the highest score divided by the number of items. This in effect gave a discrimination index of the use of the items within the scales. A presentation of this type is given in Table V.

Discussion of the Findings

The tables of findings present the number of items for each of the tests, the amount of time taken for administration, and the characteristics of the assessments derived from the test batteries. The range of scores is mainly thought to be meaningful with respect to those falling within the Q_1 and Q_3 range. Extreme scores, most investigators agree, derive extreme grade placements or percentiles which are less meaningful than those near the middle of the distribution. A comparison of the number of items in the test with the lowest score Q_1 or mean minus sigma, mean plus sigma, and highest score gives an indication of the utilization of the items for student differentiation. It also leads to a type of computation of item difficulty which was felt to be useful in comparing the various batteries.

The tables of results showed some variation in the number of floor items (easy items that are below the lower limits of the measure for population and given grade level for which the test is intended) as well as ceiling items (items which are above the levels for which the test is primarily intended). The Kuder-Richardson reliabilities tend to support the data provided in the test manuals, showing reliabilities which are sufficient to meet the standards of the APA and AERA on technical considerations for test construction and test usage.

The use of the mean score divided by the items possible for the various sub-tests is described as a rough indication of mean item difficulty. Actually, this value is the average of each individual score in relation to the maximum obtainable score. Thus, the value of M divided by n equals .33 and could be interpreted as follows: of the individuals taking the test, the average of each individual score in relation to the total number of items would represent 33 per cent of the items correct. On the average, half of the children receive scores in the upper two-thirds of the test item range, while the other half receive scores in the lower third of the test item range. A value larger than .33 indicates that on the average more of the responses were correct.

According to this method of arriving at a difficulty index, certain sub-tests contain items which as a group are relatively more difficult with respect to the total number of items than sub-tests. Table VI also compares the M-SD divided by n, M+SD divided by n and the lowest and highest scores obtained divided by n. For example, on some tests it was found that 5/6

TABLE VI

Reliability Coefficients Between CAT Elem. Form X and SRA Achievement Series Form A

Test	*K-R #21*	*Lowest Score n*	*M-SD n*	*M n*	*M+SD n*	*Highest Score n*
CAT: Reading Vocabulary Elem. Form X	.94	.10	.43	.65	.87	.98
SRA: Reading Vocabulary 4-6, Form A	.91	.02	.21	.42	.62	.88
CAT: Reading Comprehension Elem. Form X	.92	.23	.44	.63	.82	.99
SRA: Reading Comprehension 4-6, Form A	.90	.14	.31	.52	.73	.92
CAT: Arithmetic Reasoning Elem. Form X	.78	.13	.46	.59	.72	.91
SRA: Arithmetic Reasoning 4-6, Form A	.88	.18	.36	.55	.74	.92
CAT: Arithmetic Fundamentals Elem. Form X	.80	.15	.31	.43	.55	.80
SRA: Arithmetic Concepts 4-6, Form A	.72	.10	.40	.59	.79	1.00
SRA: Arithmetic Computation 4-6, Form A	.84	.05	.29	.46	.64	.84

Grade 6, N=164

of all the pupils received scores which were greater than half of the number of items on the sub-test, whereas on another sub-test 5/6 of all of the pupils received scores which were in the lower half of the number of items on that sub-test. This type of computation of item difficulty is useful in looking at the degrees of active measurement which are obtained from the various sub-sections of these different achievement batteries.

These statistics are a sample of the types of data through which comparisons of the measuring instruments were made in the present investigation. Additional studies will consider curricular implications of item content and variations in performance by student population of varying characteristics of aptitude and achievement.

The Saugus Experiment in Multi-Grade Grouping

NEWTON S. METFESSEL

One of the major problems confronting contemporary educators has been the question of grouping. During the past five years increasing numbers of school districts have undertaken basic changes in their patterns of classifying students. The trend of these changes has been towards tighter and tighter homogeneity, that is, grouping on the basis of narrower and narrower criteria of student similarity. Students have been grouped on various similitudes of their mental ages, chronological ages, expectancies, school marks, emotional and social maturity indices, and grade placements from achievement tests.

In 1955, in a Torrance elementary school, an exploratory grouping experiment oriented towards the opposite philosophical pole was inaugurated by Walter Rehwoldt[1]. In this pattern of grouping, students were placed together on the basis of dissimilarities and differences, e.g., fourth, fifth and sixth graders were combined into one class. This multi-grade philosophy was not to be confused with the "little red schoolhouse" or "combination grades" formed on the basis of administrative need or expediency rather than philosophy.

Following the apparent success of differential grouping in Torrance, several school districts in the county of Los Angeles established experimental multi-graded classrooms in individual buildings. These included Paramount, Culver City, Downey, East Whittier and Saugus. In the latter district, under the leadership of Tracy Gaffey, the district superintendent, a three-year experiment was initiated in September 1958, involving a comparison of three multi-graded classrooms of combined fourth, fifth, and sixth graders with three "straight" grade classrooms at the fourth, fifth and sixth grade levels. The distribution of enrollment by grade level, sex and

[1]Rehwoldt, Walter, and Hamilton, Warren. "An Analysis of Some of the Effects of Interage and Multi-grade Grouping," *Unpublished Doctoral Dissertation*, University of Southern California, 1957.

Newton Metfessel is an Associate Professor of Education at the University of Southern California and also serves as a consultant for the Los Angeles County Schools Division of Research and Guidance. Before joining the staff of U.S.C. in 1956, Dr. Metfessel was a teacher-counselor at Torrance High School, instructor-psychologist at Compton Junior College, instructor in psychology at Whittier College, clinical psychologist for the U.S. Army, and lecturer in psychology, University of Southern California. Dr. Metfessel obtained his doctor of philosophy degree in 1955 from the University of Southern California.

group is reported in Table I. Parental wishes as to placement of their child in a multi-grade or straight grade classroom were respected.

Those propounding randomization would probably see the parental approval as an experimental contaminant favoring multi-grade. It may be argued by others that parents desiring their children in a straight grade are more subject matter oriented, and that parents of "gifted" fifth and sixth graders would not care to see their offspring "slowed down" by fourth graders. It may follow, however, that parents of gifted fourth graders would be favorable towards multi-grade as it would allow their children upward mobility.

TABLE I

Distribution of Enrollment by Grade Level, Sex and Group

Group	*4th Grade*		*5th Grade*		*6th Grade*		*Total*
	Boys	*Girls*	*Boys*	*Girls*	*Boys*	*Girls*	
Multi-grade I	5	5	2	4	3	4	23
Multi-grade II	3	5	3	4	1	4	20
Multi-grade III	5	6	3	3	5	3	25
Single 4th Grade	14	4					18
Single 5th Grade			14	6			20
Single 6th Grade					14	9	23
Total	27	20	22	17	23	20	129

From a population of six teachers the district superintendent selected three for assignment in multi-grade and three for the straight grade counterparts. Because of the small population of teachers it was felt that randomization might result in concentration of skill and/or teaching experience favoring one group. Consequently, selection of teachers was structured by the administrator to equate these two variables.

The major purpose of the experiment was to test the hypothesis that multi-grade students would show statistically significant, tested superiority over students in straight grades on each of the six sub-tests of the California Achievement Tests.

In September 1958 the California Test of Mental Maturity, Short Form, Elementary Level, Form S, 1957, and the complete battery of tests from the California Achievement Tests, Elementary Level, Form W, 1957, were administered by the teachers and scored in the Statistical Section of the Office of the Los Angeles County Superintendent of Schools. In May 1959 the same achievement tests were again administered to all students in the fourth, fifth and sixth grades and scored by the Newhall Elementary School psychometrist. The same pattern was followed in the school year 1959-

1960, with the exception that the May 1960 tests were scored by the classroom teachers.

A Chi-square test based on the data presented in Table I indicated that the boy-girl sex ratio of the multi-grade groups and single grade groups differed from the sex ratio of the total group at the .01 level of significance. The Chi-square of 7.95 which resulted is indicated in Table II. To minimize some of the differences indicated in the fall means (1958) of CTMM I.Q. scores and CAT Achievement Test Scores (Table III) and to be consistent with the design of the Torrance study, it was decided that a matched pair analysis of the difference in gains in tested achievement abilities as measured by the CAT be employed in this investigation.

TABLE II

A Chi-Square Comparison of the Distribution of Students by Group and Sex

Sex	*Single Grade*	*Multi-grade*	*Total*
Boys	42	30	72
Girls	19	38	57
Total	61	68	129

This table yields a Chi-Square of 7.95

The following criteria were employed in the matching process: (1) identical sex, (2) identical grade, (3) Intelligence Quotient, and (4) chronological age. The intelligence quotients were matched within five points, the chronological ages within four months. Based on the Fall 1958 data a total of 23 matched pairs was provided consisting of six pairs each in the fourth and fifth grades and eleven sixth-grade pairs. Of the twelve fourth and fifth grade matched pairs, ten pairs remained in the district until the May 1960 testing and consequently were studied for two years in an attempt to measure some of the longitudinal effects of the multi-grade grouping. The comparison of the Fall 1958 means for chronological age and intelligence quotient for the matched pairs appears in Table IV.

A nonparametric statistical test, the Wilcoxon matched-pairs signed-rank test, appeared appropriate for the statistical analysis of the matched pairs. A nonparametric test, since it is "distribution free," does not depend upon the shape of the population distribution from which the sample was drawn. The Wilcoxon test considers both the relative magnitude and direction of the differences within pairs, and is nearly 95 per cent as efficient as the t test (as indicated in Siegal, Sidney, *Nonparametric Statistics for the Behavioral Sciences*, New York: McGraw-Hill Book Company, Inc., 1956, p. 83).

TABLE III

The Fall 1958 Means of Age, I.Q., and Achievement Scores by Grade Level

	Fourth Grade		*Fifth Grade*		*Sixth Grade*	
	Reg. Grade	*Multi-Grade*	*Reg. Grade*	*Multi-Grade*	*Reg. Grade*	*Multi-Grade*
Chronological Age	9-7	9-5	10-6	10-6	11-3	11-2
CTMM I.Q.	99	108	105	103	102	113
CAT's						
Reading Vocabulary	3.25	4.82	5.39	5.51	6.03	7.13
Reading Comprehension	3.47	3.96	4.73	4.64	5.94	6.56
Arithmetic Fundamentals	4.21	3.86	4.90	5.40	5.86	6.36
Arithmetic Reasoning	3.36	3.82	4.91	4.98	5.75	6.94
Mechanics of Expression	3.60	4.30	5.12	5.34	6.23	6.82
Spelling	3.85	4.20	5.30	4.59	5.72	6.56

TABLE IV

A Comparison of the Fall 1958 Means for Chronological Age and Intelligence Quotient for the Matched Pairs

Grade	*Class*	*Chronological Age*	*I.Q.*	*N*
4	Single Grade	9-4	107	6
4	Multi-grade	9-6	107	6
5	Single Grade	10-4	106	6
5	Multi-grade	10-4	106	6
6	Single Grade	11-3	110	11
6	Multi-grade	11-3	110	11

A statistical analysis was made for each of the 23 matched pairs for 1958-1959 and the ten matched pairs in the program from 1958-1960 through utilization of Wilcoxon's T test. The only significant T, out of a possible 24, was at the fifth-grade level, for the 1958-1959 group, favoring the straight grade in arithmetic fundamentals. The advantage was not stable, disappearing when these fifth graders completed their sixth-grade year and probably represents a chance result in terms of a Type 1 error, where one single significant result appears among a large number of non-significant findings.

The hypothesis, therefore, that multi-grade students would show a gain in achievement test scores significantly higher than the single grade students is rejected, as both multi-grade and single-grade methods appear equally effective in terms of the tested abilities measured in this experiment.

Introspections of Gifted Children

MARCELLA R. BONSALL

Interest in educating gifted children has produced many administrative devices, curriculum implementations, methodological procedures and guidance adaptations. Most plans were developed from, and are limited by, the accumulation of psychological principles and descriptions of characteristics of gifted children. These plans strongly suggest generalizations applicable to groups of gifted students, such as advanced courses and increased participation in extra-curricular activities.

Generalized plans allow little or no emphasis to be placed on the individual student's own development. One common practice is the assignment of an "independent study project" to a gifted student, regardless of his interest and curiosity in the topic assigned, simply because it will benefit classmates. Such devices foster procrastination and boredom. Frequently the "broadening socially useful experience" is accomplished by delegating a gifted student —sometimes for a semester, or a school career—to a routine school job, such as front office helper or cashier in the cafeteria, where a high level of efficiency is attained in two or three weeks' time. These tasks force the gifted student to stand still for the rest of the semester. When educational plans fail to account for each gifted student's growth, these plans will, in part, defeat the purpose for which they are designed.

Gifted students face similar problems in adolescence as do normal students. Although identical descriptive terms can be used for both groups, gifted students are more keenly aware of and feel more intensely about these needs, and yet it is frequently assumed that they can and will work out their personal problems unaided. When school plans are at variance with what individual gifted students think and feel about themselves, they quickly become inadequate.

The identification of personal concerns might well aid school people in

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Marcella R. Bonsall is consultant in the Division of Research and Guidance, Los Angeles County Schools, a position she has held for two years. Dr. Bonsall was formerly a teacher of special classes for gifted elementary children, principal of an elementary school, including a special training center, supervisor of counseling and guidance, assistant professor of educational psychology, and consultant for the California State Department of Education Project for the Gifted. She received her doctor of education degree in 1952 from the University of Southern California.

more effectively individualizing the general educational plans specifically geared for gifted students. It was the purpose of this exploratory study to attempt to locate personality needs of satisfactorily achieving, well-adjusted gifted high school students through the use of personal documents. In other words, this study searched for answers to the following questions: **What are some of the personality needs of gifted students? What kinds of solutions to personal problems are gifted students seeking? Are gifted students attempting to solve personal problems unaided by adults? What are the more pressing personal problems with which gifted students need help?**

Procedure Followed

The topical autobiographical letter, which is ego-centered, was employed for this study. Whether written either from the nomothetic or the ideographic approach, personal documents are useful as "self-revealing records that intentionally or unintentionally yield information regarding the structure, dynamics, and functions of the author's mental life" (1). Through this technique the intensity of feeling and the crucial importance of problems, which are ordinarily not available, are brought to light.

Forty-five gifted high school students in the eleventh grade in each of three metropolitan high schools met with the examiner in three groups of fifteen. These students had IQ's at or above 130 on the L form of the Stanford-Binet, and placed at or above the national 85th percentile on the ITED. All were taking college preparatory courses, had earned better than average grades, and were participating in one or more major extra-curricular activity. The students were considered by the principals, the vice-principals, and the counselors to be well-adjusted teen-agers.

The students were informed that a study was being made on the personalities of teen-agers. Letters from teen-agers who could and would write on what they considered to be personal concerns were being voluntarily sought. The original letters would be kept strictly confidential. The only limitation, which they were to keep in mind while writing, was that each writer should restrict his comments to his own concerns. To further insure anonymity, a stamped envelope with the home address of the examiner was furnished.

Twenty-seven eleventh-grade gifted students voluntarily returned responses. The chronological age spread for fourteen boys was from 15.5 to 16.1, while that of thirteen girls was 14.8 to 16.0. The letters varied in length from two to five pages. Seven students signed their names to their letters; one added, "if you have any suggestions to my problem and have time I would appreciate it." Approximately half of them started their letters with what they considered to be their poor traits, while the others started with what they considered their favorable attributes.

Responses Categorized

The contents of the letters suggested the following categorical arrangement:

Social- or Other-directed Concerns
- **Parental Concerns**
- **Peer Concerns**
- **Social Concerns**

Self-directed Concerns
- **Vocational Concerns**
- **Religious Concerns**
- **Physical Concerns**
- **Intellectual Concerns**
- **Temperament Concerns**

The majority of the letters used an ideographic approach spilling over with ego-centered individuality. A few were written from a nomothetic approach accounting for individuality more or less in terms of objective norms.

An example of the ideographic approach is as follows:[1]

"If my personality is what I feel and what I do then I have a very confused personality. I am never quite the same from one day to the next. One day I feel very satisfied and confident and the next day I feel I am not accomplishing anything and am terribly uncertain and lost."

An example of the nomothetic approach is as follows:

"Personality is the sum total of any human being. In order to obtain even a brief glimpse into the mannerisms and characteristics and complexities which comprise an individual, a complete but concise statement of principles, beliefs, opinions, ideas, and ideals is necessary. Please do not think me egotistical or over-critical of others in this analysis of myself and my environment."

Parental Concerns

Several students considered their home lives and their relationships with parents to be very good ones. A boy said, *"My mother gripes me but I suppose that's natural for one my age. I love her anyway."* One girl whose relationships were poor had this to say:

"I've never really depended upon anyone to help me with my problems, especially my mother. I have never been close to my mother or my step-father, whom I've had since I was six. My girl friend knows more about me and my problems and what I feel than my mother. Mother has never taken the time out to try to understand me. Now I just never bother to tell her anything."

Peer Concerns

Among those who had similar concerns about peer relationships mentioned liking people and having many friends but they were anxious about their "shyness and self-consciousness" and being "too easily embarrassed." All mentioned these conditions were not as satisfactory at the elementary and junior high level as at the senior high level. Eight "still felt different

[1]All quoted responses have been reproduced verbatim.

and somewhat inferior" yet they "got along well and seem to be tolerated."

All had learned to "talk to people" and to "make friends easily" but found themselves at times "feeling uncomfortable."

One girl had this comment to make:

"Popularity and personality seem to walk hand-in-hand. Away from my home where I know people don't know that I am smart I seem to be popular. The people that I meet tell me that my personality is a good one. But despite the fact that I overcame one problem away from home I gain another. Most people think that I am three years older than I am. I don't act older than I am but I find this is quite a problem in getting boy friends. Everything is fine until the matter of age comes around. If I could only lie, my problem wouldn't be as great but I pride myself on my honesty."

Social Concerns

Almost all students were interested in the more abstract and the more far-reaching results of human wants, needs, and values rather than the immediate time and closeness in space of people. It was not that they neglected or overlooked the immediate situations but rather that their concerns are far reaching and appear to be extended and to include long-term goals and eventualities. The nearness aspects were "attempting to see both sides," valuing as important the traits of "courtesy and graciousness even though considered by some as sissy," "loyalty," "trustworthiness," and "consideration of others' feelings regardless of age."

The future aspect mentioned most frequently pertained to recognition as "worthy persons," becoming a "good citizen," and working toward "having little or no racial or religious prejudices." The latter type of comments were qualified by mention of having friends who were from different ethnic groups.

A quotation which follows is included in order that the feeling-tone of attitudes and the scope of concerns may be illustrated.

"In one English class we were asked to tell of what we'd wish for if we had one wish. Instead of wishing I'd lose 50 or 60 pounds I wished for world peace, happiness, and prosperity; freedom from want, greed, and ignorance. You see I am fairly people-loving and I'd like to help that wish come true. I want to help the unfortunate. I don't think I'm medically inclined. I can't help my fellow man that way, but I'd love to be able to help somehow—but how?" (girl)

Only a few wrote of vocational concerns. Because each was unique no summary was made. One quotation is included here.

"I have several goals in life, but one of them is particularly important. This is accumulating a tremendous amount of wealth. Not so much for the money itself but the enjoyment and pleasures in obtaining it by successfully carrying out a well calculated risk. I could never discipline myself to enter into a professional field, for I would certainly be limited (wealth and endeavors). By endeavors I mean that because I have found it impossible for me to contain a true and lasting interest in any one field it will be necessary for me to be free when desired. As money covers all fields it should be quite sufficient in pleasing my whims. Though this is definitely an age of specialists I will no doubt succeed, for there must be an organizing force. Marriage is necessary but will undoubtedly not hinder my progress."

Religious Concerns

Two girls and one boy expressed strong attachments to religious beliefs as sources of satisfaction. The following two held reservations. One said, *"Even though I have a very strong set of ideas and ideals concerning God, my mind is constantly being put in a turmoil by the additions of new facts and pressures."* One girl wrote, *"I don't believe absolutely, positively, indubitably in God. I even doubt He exists."*

One girl sighted disbelief in the existence of God.

"My strongest belief has to do with religion. As far as I am concerned a God whom everyone worships is nothing more than a figment of men's imagination. I consider it as being beyond the capabilities of men's minds to really know whether or not God exists. Organized religion I think is one of the greatest evils of society. Any time one group broadly proclaims that its doctrine is the only way to salvation, conflicts are bound to arise." (girl)

Physical Concerns

Four boys expressed strong likings for sports and mentioned that they "were fairly good at them." All four said they received the "most satisfaction from accomplishments" in this area. One girl was concerned about not having a good figure while another girl had guilt feelings for "not eating the proper foods, or getting the proper rest." Two girls mentioned concerns about emotionally induced illnesses. One said, *"I excite myself easily. I think I talk myself into headaches."*

One boy talked of an inferiority complex and the means he was using to overcome it. For instance, he said,

"I believe I have a slight inferiority complex but nothing too serious that I won't be able to handle. This was caused by a lack of coordination and ability in many sports. My appearance, when I was younger, was quite heavy and I became used to being kidded about goofing up a play in sports, whether malicious or not. I learned to accept my inability. During the past year I have been trying to offset this by going out for more sports and building myself up so that I can break even with other kids. As far as my appearance goes I am learning to accept the fact that we can't all be handsome and I can develop a good social personality that will make up for this."

One girl had a particular problem. This is the way she stated it:

"I always feel self-conscious because of my large nose. It has always bothered me. When we are around boys I always stay behind because I think if I start kidding around they will get the idea I am flirting and that idea is absolutely ridiculous because I am not pretty. However, I am not a complete washout with boys. I am going out with one now that just graduated. He is real nice. So I guess I am not that ugly, but this one thing has always been a barrier to me, probably mentally more than anything else."

Intellectual Concerns

The intellectual aspects of personality that these students said they enjoyed were: being intellectual; enjoying competition; enjoying school; learning something new and different; being able to perform well scholas-

tically; having ability to reason, to form, and to keep opinions; possessing good memories; being curious and having many interests. The disturbing factors were: being bored unless interested; coasting along and yet getting good grades; talking too much; having to slow down pace; being pressured to perform more; and finding themselves lost in thought "even when in a group." The factor most frequently mentioned and appearing universal for this group was procrastination, not only in the sense of feeling guilty but also in the sense of not stretching to the possible heights of intellect and imagination.

The following examples will illustrate the itemized factors.

"I like being intelligent but wish people wouldn't consider me a brain. I am an average teen-age girl liking clothes, records, boys, movie stars, and the like. However, it seems that many people don't realize this. I realize I am persistent and even stubborn at times but I think persistence and stubbornness are good traits to have." (girl)

"I do everything on the basis of competition. I always am very proud of myself if I can be tops in a certain category. If I have the best school assignment, or if I get the most points in the class I have reached my peak of performance. Even though I achieve this peak a few times I never seem to be satisfied with it, and know that I could have done better. After I finish a notebook, for example, and even though I might get an A on it, I find fault with it and am partially not satisfied with it. There is that margin of fault with it which I will examine and will become again partially unhappy over my performance. I always strive to overcome this margin of fault, which results in better and more efficient work. I am trying now to overcome this complex of perfectionism. I have partially succeeded but the seed of discomfort is still there. Another unsatisfactory fault of mine is laziness. I never used to be quite so lazy as I am now. I have to drive myself a lot harder to do my homework than I used to. Last semester, for example, it took me almost 15 weeks to get back to the old grind. I am very angry at myself when the clock strikes 7:00 and I have not even started my homework and yet I think I am intelligent as the next fellow and sometimes even more so. I think I am more of an adult, have accomplished more mentally and am as dependable and as reliable—or more so—than the next man. I am especially proud when I discover a new fact and use it in conversation for school work, but if I do not use it the tables are turned." (boy)

Temperament Concerns

The temperament concerns appeared to fall into two categories, one of satisfaction and one of dissatisfaction. The satisfactory characteristics were: joy in living; working to overcome faults; satisfaction when a goal is achieved; liking people and making friends easily; having strong will powers and determinations; attempts at being responsible and attaining humility; enjoying curiosity and desiring to learn; enjoying competition; and other factors mentioned previously.

Those of dissatisfaction seemed to be: feeling inferior; loneliness; feeling different from others intellectually; often being self-conscious, shy and becoming easily embarrassed; not liking responsibilities; being selfish and inconsiderate; being conceited at times; having quick tempers and at times being unreasonable; listening to and relating gossip and being mixed up "like other teen-agers."

The examples that follow are offered in order to show similarities and also to show the uniqueness in individuality.

"A phase of life I like very much is competition on the athletic field or in a grueling debate. It affords me one of my greatest pleasures in life. Speaking of life—I love it! People, cities, deserts, oceans, mountains, trees, animals, etc., all give it that extra touch." *(boy)*

"I believe I have a slight inferiority complex. My feelings of inferiority seem to come and go in relationship to my sad and happy moods and possibly as a result of some incidents or remarks made. At times I am very self-conscious although I know there is no reason for it. It just makes things worse. I am also inclined to be conceited even though I really have no reason to be. As far as my opinions go I am not really extreme about anything, or so I think. I might be considered conservative. I like people and try to make friends with all people. There is one drawback: I am inclined to be bossy and want my way. Of course this doesn't always go; I have to think of others." (boy)

"Even though I think like an adult I don't act like one many times. Sometimes I talk too much even though I know I do. Sometimes I joke too much or become belligerent or sassy even though I know it is wrong. After I do stop I become angry with myself for acting like a child. I realize that no one considers me a full-grown adult but I am very pleased when I find someone who treats me as such and again I am angry when someone treats me as a child which I don't consider myself to be. I am striving to not only think like an adult but to act as one also. This doesn't seem to be progressing very rapidly, but it is progressing." (boy)

"I want to wake up tomorrow, for I dream that tomorrow I will find myself. I know not why I am unhappy, dissatisfied with my surroundings. I cannot perceive why I am created, what duty I am to perform. Life is incomprehensible to me. I do not know what I am or what I believe. A desire to know myself keeps me searching." (girl)

Future Research Indicated

Merely the surface has been scratched in identifying personal problems of well-adjusted, satisfactorily achieving, gifted students. The questions postulated were barely answered; however, direction for research and kinds of help needed for gifted students are indicated. These are some of the questions with which future research must be concerned:

1. Through the use of personal documents is it possible to locate potential and/or submerged personality concerns of well-adjusted gifted students which might block discovery of more natural endowments sooner in life, thereby decreasing frustrations?

2. Is evidence apparent that well-adjusted gifted students are seeking satisfying and lasting solutions to their personality problems depending almost entirely on self-direction?

3. Is evidence apparent that they are attempting to gain self-control without loss of self-esteem?

4. Are well-adjusted gifted students being pressured into "paying high prices" for acceptance and popularity among peers?

5. Are well-adjusted gifted students gaining status among peers at the expense of failing to uncover unique aspects of personality and perhaps retarding future productiveness?

6. Is there evidence that well-adjusted gifted students attempt to remove obstacles and overcome certain faults in order to be more effective in leadership activities?

7. What is the effect on well-adjusted gifted students who have keen sensitivity to desires of classmates, but lack confidence in themselves?

8. Is there evidence the concerns are great enough to seriously hamper well-adjusted gifted students from achieving optimal growth and limit future accomplishments?

9. Do feelings of guilt and frustration about the tendency to procrastinate spring from tasks which do not challenge and stretch the intellect and the imagination enough or in ways to satisfy the desires of well-adjusted gifted students?

10. In socialization processes has enough thought and consideration been given to helping well-adjusted gifted students develop feelings of belongingness and worth, or are they pressured to help others under the assumption this method will bring about, by some magic twist, these necessary feelings?

11. Are they being helped to establish satisfactory relations of self to society and to find answers to "Who am I," and "What am I?"

12. Can these students be helped enough to dare to be themselves and to develop outstanding ego strength which is the common denominator of gifted, highly productive adults?

13. Can the school apply the concepts of enrichment and acceleration in the effective areas, as well as in the intellectual areas, in order that well-adjusted gifted students' talents become more spontaneous and more creative?

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Students' Evaluations of Guidance Services

MURIEL THOMSON

Programs of guidance in public secondary schools have tended to follow one of three major patterns of organization. Counseling service has been offered by (1) teachers released from teaching on a full-time basis for the purpose of counseling, (2) teachers released from teaching on a part-time basis for the purpose of counseling, and (3) teachers offering counseling as an adjunct to classroom teaching without released time for counseling. These three patterns of guidance organization have become so well defined that they are now not only recognizable in practice, but are also well established in guidance literature. However, considerable difference of opinion exists concerning the desirability of each of these three patterns of guidance service. Therefore, as the guidance program has become increasingly an integral and necessary part of the total program of secondary education, the need for determining the relative effectiveness of each type of counseling service has become more apparent.

Guidance programs have tended to be structured primarily on the emotional beliefs of a few or on local economic restrictions. Although there are numerous status studies of guidance programs at various administrative levels, and many evaluations of individual guidance programs, there have been no comparative studies which could lend research support to the establishment of one or another type of program.

It was the purpose of this investigation to determine whether students reacted differently in their evaluation of the counseling received under each of the three types of counseling service, i.e., full-time counselors, part-time counselors, or basic-course teacher-counselors. Implicit in the research design was the recognition that student reactions are but one index of the relative effectiveness of a total guidance program.

The hypothesis examined in this study was that there are significant

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Muriel Thomson has been a consultant in the Los Angeles County Schools Division of Research and Guidance since 1955. Formerly an attendance supervisor and junior high school teacher in Tucson, Arizona, and vice-principal of Juvenile Hall School in Los Angeles County, Dr. Thomson obtained her doctor of education degree from the University of Southern California in 1960.

differences in the evaluative responses of students to guidance services when these services are provided under differing types of organization, i.e., full-time, part-time, and basic-course teacher-counselors. This general hypothesis was examined by attempting to answer the following questions in terms of the sex and the mental ability levels of the students:

1. What significant differences exist, if any, between the proportions of students who stated that they did or did not want help in specific areas of guidance when provided under varying types of guidance organization?

2. What significant differences exist, if any, between students' evaluations of the guidance received in specific areas of guidance organization?

3. What significant differences exist, if any, between the proportions of students who (a) felt that they had not received guidance help when they desired it, and (b) students who both wanted and felt they had received guidance help in specific areas of guidance when provided under varying types of guidance organization?

Procedure of Study

Data for this study were the responses of 2,335 senior students on an evaluative instrument concerning guidance services experienced in high school. Of the twelve schools included in the study, four had full-time counselors, four had part-time counselors, and four had basic-course teacher-counselors. These schools were all public secondary schools in the vicinity of Los Angeles. They were equated as closely as possible for inter-school similarity of guidance programs within the three groups and for comparable socio-economic status. The guidance program in each school had been a consistent one for the past four years. Only the responses of those students enrolled in the schools for their entire high school career were included in the study.

The evaluative instrument was printed on an IBM card. On it the students were asked to report for each of nine areas of guidance:

1. Whether or not they had wanted help in this area, and, if they did want help,

2. To give a rating of the help received on a continuum scale from 1 (not helpful) to 5 (very helpful).

The nine areas of guidance were: (1) scheduling of classes, (2) educational planning, (3) vocational selection, (4) college selection, (5) selection of extracurricular activities, (6) increased self-understanding, (7) personal problem solving, (8) increased adjustment to others, and (9) learning better study habits.

The data were treated by chi-square comparison according to the sex

and mental ability level of the student with the type of guidance organization serving as a common denominator to all comparisons. Significant differences were found in 82 of the 342 comparisons made.

Major Findings

On the basis of the significant differences found in the chi-square comparisons, the research questions were answered. Major findings were:

1. Students having basic-course teacher-counselors evidenced in the greatest number of areas the largest proportion of students who wanted help. Students having full-time counselors evidenced in the next greatest number of areas the largest proportion of students who wanted help. Students having part-time counselors did not evidence in any area the largest proportion of students who wanted help.

2. Students having full-time counselors gave the most favorable ratings to the guidance help received. Those having basic-course teacher-counselors gave the next most favorable ratings, and those having part-time counselors gave the least favorable ratings to the guidance help received.

3. On the whole, girls gave more favorable ratings to the guidance help received than did the boys.

4. Comparisons within mental ability groups yielded significant differences only between groups of students of average mental ability. Among these students, those having full-time counselors were the most favorable to the guidance help received. Those having basic-course teacher-counselors were the next most favorable, and those having part-time counselors were the least favorable to the guidance help received.

5. Compared on the basis of mental ability level, students of average ability were the most favorable to the guidance help received. Those of below average ability were the next most favorable, and those of above average ability were the least favorable to the guidance help received.

6. Compared according to sex and by total students, students having part-time counselors evidenced most frequently the largest proportion that felt they had not received guidance help although they had desired it.

7. Compared within mental ability groups, students of average ability having part-time counselors evidenced most frequently the largest proportion that felt they had not received help, although they had desired it.

On the basis of the findings to the research questions, the research hypothesis was upheld, i.e., that there is a significant difference in the responses of students to the guidance services in selected public secondary schools in the Los Angeles vicinity when the same areas of service rendered under differing types of organization are evaluated.

MEET YOUR CACER -- 4

(This is the fourth of a series of biographical sketches of the members of the California Advisory Council on Educational Research.)

Harry W. Smallenburg, Director of the Division of Research and Guidance of the Los Angeles County Schools, is the guest editor for the September *CJER*. A native of Buffalo, New York, where he taught in the elementary and secondary schools, Dr. Smallenburg came to Burbank, California, and served as a teacher, counselor, elementary principal, and director of research until he assumed his present position in 1944. He has been active in CACER affairs, and was, in fact, one of the original founders of the organization.

Dr. Smallenburg is the author or co-author of numerous publications in the guidance field, such as the following: *Guiding Today's Children; Guidance Services, Organization and Administration;* and *Guidance in Elementary Schools.* His professional affiliations are equally as distinguished as his writings and include active participation in the American Personnel and Guidance Association, the National Vocational Guidance Association, American School Counselors Association (immediate past president), and the American Psychological Association. He also has been president of the Alpha Epsilon Chapter of Phi Delta Kappa and was selected by Delta Epsilon for the lectureship award at the University of Southern California, from which institution he holds his doctorate.

Dr. Smallenburg has an interesting family. His wife, Dr. Carol Smallenburg, is an Associate Professor at Los Angeles State College. They are the parents of four children: Harry, a freshman at the University of California at Santa Barbara; John, a tenth grader; Carol Ann, an eighth grader; and Robert, who is entering first grade. They enjoy family activities, and can think of nothing more exciting than exploring the mountains and deserts of the West by trailer camping.

Harry Smallenburg's influence has been felt throughout the nation. The Los Angeles County Research Division under his leadership is clearly one of the most outstanding research divisions of its kind to be found anywhere. The success of this organization is due to the inspiration and foresight of its Director.

Using Data Processing in Planning A County Institute Program

J. Richard Harsh

In the spring of 1959 the Los Angeles County Superintendent of Schools Office made a survey of the reactions of certificated staff members to the 1958-59 County Teachers' Institute. In previous years the County Superintendent of Schools Office, through the consultants working in the school districts, had obtained sample reactions and suggestions regarding the institute offerings and the plans which were desired for the subsequent institutes. However, at this time it was felt that a total survey of all certificated staff members should be obtained which would offer substantial assistance to both school districts and the County Office in planning the subsequent institute and in-service offerings.

A survey questionnaire was devised by the institute committee of the County Office which offered an opportunity for each certificated staff member to indicate his reactions to such questions as: the type of planning of the institute; how the planning should be accomplished; the variety of topics covered by the institute; the most helpful meetings from the standpoint of content, time of day, type of persons participating; the time of meeting; and the requirements for institute attendance. The respondents also indicated their district's type, their professional assignment, and their number of years experience in public education.

After the survey questionnaire was constructed, a mark-sensing card was designed which allowed the respondents an opportunity to mark their answers on the card with an electrographic or IBM graphite pencil. The cards were then sent to the County Office where each was run through the mark-sensing machine and the responses punched in a conventional IBM card.

A summarization of the responses of the approximately 6,000 certificated staff members was tabulated on the data processing machines and a summary was made. Forty-six elementary districts, ten high school districts, and

three junior college districts were included in this survey. Table I presents the summarization of the personnel responding by position and experience.

TABLE I

Number of Personnel Responding by Position and Experience

Position	*Less Than 1 Year*	*1-4 Years*	*5-9 Years*	*10 or More Years*	*Total*
TEACHERS					
Elementary	360	1,069	1,017	1,155	3,601
Secondary	145	457	479	461	1,542
Adult Education	4	17	19	15	55
Junior College	7	42	91	102	242
Total Teachers	516	1,585	1,606	1,733	5,440
SUPERVISORS					
Elementary	2	16	30	39	87
Secondary	2	14	33	55	104
Junior College	—	1	5	7	13
Total Supervisors	4	31	68	101	204
ADMINISTRATORS					
Elementary	—	3	69	117	189
Secondary	—	—	29	75	104
Junior College	—	—	2	17	19
Total Administrators	—	3	100	209	312
				Total Number of Respondents.....	5,956

The other tables show the typical types of reports developed from the punch cards. Table II shows the choice of the respondents regarding who should plan institutes; Table III is concerned with the content of the most helpful meetings; and Table IV indicates the types of institute meetings which were thought to be most helpful.

Through the use of an adequate explanation and direction sheet it was found that 96 per cent of the respondents were able to mark their cards with accuracy, and less than one-half of 1 per cent of the mark-sensing cards were marked in such a way that it was impossible to score them or process the cards.

This system of survey through mark-sensing card procedure and data processing summarization proved to be an effective and efficient way of obtaining suggestions for the planning of the institute by the certificated staffs of the county districts participating in the institute.

TABLE II

Question: "The planning of institutes should be done by:"

CHOICE	ELEMENTARY												SECONDARY											
	Teachers				Supervisors				Administrators				Teachers				Supervisors				Administrators			
	1*	2*	3*	C*	1	2	3	C	1	2	3	C	1	2	3	C	1	2	3	C	1	2	3	C
a. Teachers	26¶	21	17	23	13	20	25	17	24	27	21	24	32	23	15	26	29	20	16	24	18	26	21	21
b. District supervisors and coordinators	14	37	21	23	20	39	20	26	5	30	23	16	11	30	19	19	5	36	18	17	7	38	24	20
c. District administrators	5	17	20	11	3	21	18	12	3	23	30	14	3	12	19	9	5	16	14	10	2	14	25	10
d. Out-of-district consultants (e.g., County Office, university)	4	9	11	7	3	7	9	6	2	9	6	5	5	15	13	10	3	10	13	7	3	12	13	7
e. Combination of those listed above	48	10	20	31	59	12	20	36	67	9	14	39	43	13	19	29	54	10	18	33	67	7	11	38
f. Unable to say	3	2	6	9	1	—	3	1	—	—	3	—	5	4	9	5	5	5	12	6	2	—	4	2
No response	1	5	6	3	1	2	5	2	—	3	5	2	1	4	6	2	—	4	9	3	1	4	3	2

*1 = 1st Choice, 2 = 2nd Choice, 3 = 3rd Choice, C = Composite (Weighted)

¶All responses are in terms of per cent

TABLE III

Question: "The content of the most helpful meetings has been:"

CHOICE	ELEMENTARY												SECONDARY											
	Teachers				Supervisors				Administrators				Teachers				Supervisors				Administrators			
	1*	2*	3*	C*	1	2	3	C	1	2	3	C	1	2	3	C	1	2	3	C	1	2	3	C
a. Inspirational	20¶	9	12	15	28	9	9	18	28	14	15	21	17	9	10	13	14	12	10	13	32	11	20	23
b. Curriculum subject matter	33	25	12	27	24	18	13	20	32	35	12	30	24	20	12	21	20	26	13	21	9	24	21	16
c. Instructional techniques and methods	28	29	14	26	22	22	18	21	23	23	21	23	25	19	12	20	26	16	10	20	20	13	11	16
d. Guidance procedures and techniques	4	12	18	9	7	18	15	12	3	9	17	7	5	12	11	8	14	12	10	13	18	17	8	16
e. Child growth and development	3	7	10	5	9	8	14	10	5	4	8	5	2	7	6	4	7	6	12	7	8	8	8	8
f. Evaluation and research	1	3	8	3	1	13	7	6	2	2	6	2	3	9	11	6	5	12	14	8	1	6	9	4
g. Community characteristics	1	2	3	1	—	—	3	1	—	2	2	1	2	4	6	3	—	3	8	2	—	6	3	2
h. Current economic, social, and scientific issues and developments	6	7	11	7	3	6	10	5	6	7	10	7	14	11	14	13	7	9	13	8	6	13	11	9
i. Unable to say	4	3	8	4	2	2	6	3	2	1	5	3	8	6	13	9	5	2	10	6	5	2	8	5
No response	1	4	5	2	3	3	3	3	—	2	4	1	1	3	5	2	1	3	3	2	1	1	2	1

*1 = 1st Choice, 2 = 2nd Choice, 3 = 3rd Choice, C = Composite (Weighted)
¶All responses are in terms of per cent

TABLE IV

Question: "The types of institute meetings which have been the most helpful have been:"

CHOICE	ELEMENTARY												SECONDARY											
	Teachers				Supervisors				Administrators				Teachers				Supervisors				Administrators			
	1*	2*	3*	C*	1	2	3	C	1	2	3	C	1	2	3	C	1	2	3	C	1	2	3	C
a. Large meeting with speaker	20¶	17	24	20	17	16	33	20	16	16	35	20	23	17	21	21	21	14	31	20	24	19	35	24
b. Workshop on curriculum content and techniques	52	22	8	35	39	32	17	33	52	27	10	37	34	21	13	26	28	35	6	26	31	31	17	29
c. Series of meetings on special content areas (e.g., curriculum, guidance, research, evaluation, child study, special education)	15	31	20	21	29	26	18	26	25	39	20	29	20	27	18	22	34	24	16	28	37	31	16	31
d. Field trip or excursion	4	13	15	9	8	12	12	10	3	11	14	8	10	15	14	12	10	13	16	12	6	10	12	8
e. Program presented over television	5	9	16	8	2	8	7	5	3	4	10	5	6	10	13	9	2	7	13	5	1	6	7	4
f. Unable to say	3	3	11	4	5	2	8	4	—	2	7	2	6	6	17	8	4	6	11	6	2	2	9	3
No response	1	4	6	3	—	3	5	2	—	1	4	1	1	4	6	3	2	3	8	3	—	2	5	1

*1 = 1st Choice, 2 = 2nd Choice, 3 = 3rd Choice, C = Composite (Weighted)

¶All responses are in terms of per cent

A Survey of Classes for the Educable Mentally Retarded in Los Angeles County

MILTON J. MIKLAS

A survey and follow-up was made of the classes for the educable mentally retarded in Los Angeles County for the school year 1959-60, with the final report being written in May 1960. The survey ascertained the locations of special training classes at each organizational level, the number of classes, the IQ range, and the chronological age range. Also, information was obtained from school districts regarding the issuance of regular diplomas, special diplomas, certificates of completion, certificates of attendance, or letters to the mentally retarded who had graduated from elementary or secondary special training classes.

Table I shows the number of classes at the elementary, junior high, three and four year high school levels.

From these data one can make certain implications regarding the number of children in special classes. If you assume that each class averages 15 children, there would be 14,340 children in Los Angeles County classified as mentally retarded. At the time of this survey there were 1,061,522 children enrolled in the elementary and secondary schools of Los Angeles County. Thus, almost 2 per cent of the children were in special training classes.

At the secondary level there were 235 classes. About 25 per cent of the classes for the educable mentally retarded are at the secondary level. Using an average of 15 students per class there were approximately 3,525 children in the secondary program.

These data indicate that there are three times as many classes in the first six years (grades 1 to 6) of school programs than there are in the second six years (grades 7 to 12). This suggests that there may be continued need for expansion of the program for educable mentally retarded at the secondary level. Not only is such a need suggested by the number of classes

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Milton Miklas has for eight years been Consultant in Special Education for the Los Angeles County Schools. His former experience includes that of high school counselor-teacher of mentally retarded, vocational counselor at the University of California Veterans Guidance Center, Los Angeles, and John Muir College Veterans Guidance Center, Pasadena, psychologist with the vocational rehabilitation section of the Veterans Administration, Chicago, and Clinical Psychologist, U.S. Army General Hospitals. Dr. Miklas obtained his doctor of education degree in 1954 from University of California, Los Angeles.

TABLE I

Number of Special Training Classes in Los Angeles County for Several Organizational Levels

	Elementary	*Junior High*	*High School* 4 Yr.	3 Yr.	*Total*
Los Angeles County (not including Los Angeles City)	225	64	54	33	376
Los Angeles City School District	496	62	—	22	580
Total	721	126	54	55	956

reported, but it has been substantiated by the Special Education Consultant's personal observation and by reports from elementary, secondary, and unified school district superintendents. Moreover, there is a shortage of work experience programs for these youth. The great majority of secondary schools that have programs for the mentally retarded have not embarked on a work experience program for them.

Diplomas to the Mentally Retarded

The survey indicated that most elementary school districts give their graduates of special training classes the same kind of diploma presented to the non-retarded students. With regard to diplomas, it is noted that the Los Angeles County Board of Education in its meeting of May 31, 1955, carried a motion that "authorization be given for the issuance of regular diplomas upon graduation to pupils who completed eight-grade special education classes, Point One Program."

With twelve union high school districts reporting, there are seven who grant the same type of diploma to the educable mentally retarded as to the other high school graduates. In five union high school districts a letter or certificate has been substituted.[1] The data regarding unified school districts are not conclusive, because in some instances the elementary school of the unified school district will issue a diploma and the secondary school will give a letter or certificate; however, the implications are that most unified schools are not giving diplomas at both elementary and secondary levels.

There are many who feel that this action is not justified if a student in the special training class has successfully completed the requirements of the special training course. Alternative ways of handling this problem would be to revise the entire diploma structure and indicate *on any* diploma granted by a high school to a student the kind of course which represented

[1]The State Department of Education states that this procedure is illegal.

his major, or to have on the back of each diploma a transcript which indicates the subjects the student took while in high school.

Selection of Pupils

Multiple criteria are always utilized for the selection of pupils in special training classes. Since the IQ is frequently used as one of the measures, it was investigated as part of the survey. Variations in IQ range among districts were anticipated, since other criteria are involved in selecting children for mentally retarded programs.

It was found that 64 school districts had special training classes with an IQ range of 50-80; 17 school districts had classes with IQ ranges of 50-89; and 4 school districts had classes with an IQ range of 50-94. Thus, the majority of the school districts' special training classes had an IQ range of 50-80. Table II is a summary of districts' lower and upper IQ limits of special classes. It is apparent from Table II that school psychologists use variable measures to determine mental retardation and bases of placement of children in special training classes. However, the variation suggests the need for constant assessment of criteria that are used as a basis of placement.

TABLE II

Lower and Upper Limits of the IQ Ranges of Mentally Retarded Classes

	Lower Limit		*Upper Limit*	
Interval	*Frequency*	*Per Cent*	*Frequency*	*Per Cent*
35-39	1	.3		
40-44	5	1.4		
45-49	39	11.3		
50-54	131	38.0		
55-59	94	27.2		
60-64	54	15.7		
65-69	17	4.9	3	.9
70-74	4	1.2	27	7.8
75-79			233	67.5
80-84			63	18.3
85-89			14	4.1
90-94			4	1.2
Above 95			1	.3

Multiple Classes in Districts

The survey showed that 24 districts maintained one class for the educable mentally retarded, 16 others had two classes, and 45 districts had three or more. Thus, the majority of school districts have three or more classes for educable mentally retarded. This is an advantage when the

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The Child and Youth Study Programs In California

GERTRUDE WOOD

The Child and Youth Study Program was developed through the leadership of Daniel Prescott during the early 1940's (2). Prescott recognized that a complex body of scientific information explaining and describing human behavior, learning, and motivation was available to educators. However, a great need existed, and continues to exist, to translate, integrate, and bring into synthesis the vast amount of research findings from the many scientific disciplines.

The Commission on Teacher Education of the American Council of Education set up in 1938 a division on Child Development and Teacher Personnel with Prescott as chairman. It was the work of this division to devise ways to bring together the reports of research studies about human development, learning, and behavior and to explore the educational implications of the findings.

Groups of representatives from public school systems and university and college staffs responsible for teacher education were invited to work at the University of Chicago reviewing, synthesizing, and putting into a more usable form the findings of the many research studies.

The work of this Commission on Teacher Education resulted in two major accomplishments: (1) the groundwork had been laid for a synthesis of research findings from many sciences; and (2) it had been demonstrated that general theoretical knowledge is ineffective unless it is accompanied by skills both in collecting data about individual boys and girls and in analyzing data in light of those scientific principles which will explain the child's motivation, needs, and the learning process.

The Child and Youth Study Program resulted from the work of the Commission and has become established as one of the most effective programs for professional growth of teachers, administrators, pupil personnel specialists,

Gertrude Wood is Consultant in Research and Guidance and Child Study for the Los Angeles County Schools, a position she has held for 14 years. Dr. Wood served for one year on the staff of the Institute for Child Study at the University of Maryland, and has lectured and taught at summer sessions at U.C.L.A. and U.S.C. She obtained her doctor of education degree from the University of Southern California in 1954.

and curriculum workers (1, 3). In 1947 the Institute for Child Study was established at the University of Maryland to provide consultant service in those school systems throughout the United States that wished to develop local programs of Child Study, to provide a graduate and undergraduate program of studies in human development at the University, and to conduct basic research studies.

A survey was completed in March 1960, indicating the scope of Child and Youth Study programs in California. This survey showed that there are 17 programs in California which are sponsored by 14 offices of County Superintendents and three programs sponsored by city school districts. Nearly 2,000 educators were participating in Child and Youth Study groups during the school year 1959-60.

Table I presents the total number of study groups, the year level at which they are working in this program, and the total number of participants in the groups.

TABLE I

Number of Child and Youth Study Groups and Participants for Various Levels of Programs—March 1960

Level of Program	*Number of Groups*	*Number of Participants*
Year 1	137	1,181
Year 2	57	446
Year 3	28	175
Beyond Year 3	8	59
Totals	230	1,981*

*Total based upon the reports received from the counties and cities. This total includes 120 participants who were not reported by year level.

Leadership Training Program

A significant aspect of the success of this professional program is due to the preparation of coordinators and leaders or chairmen for each of the study groups. Leadership training is provided through two to six weeks of workshop experience specifically planned to instruct prospective leaders in child study procedures and group leadership skills.

Table II indicates the ways in which the leaders and coordinators in California have received their preparation for this specific program.

Although a co-sponsorship of the Child and Youth Study programs is maintained between the local public school systems and the University of

TABLE II

Various Kinds of Leadership Training Taken by Leaders and Coordinators

Training	*Number of Leaders and Coordinators*
Local county leader workshops, and workshops at UCLA, Sacramento, Fresno, and San Francisco State Colleges	290
Former staff members at the Institute for Child Study	3
Doctoral studies in Human Development Education, University of Maryland	2
Attendance at the Institute for Child Study, six-week sessions	16

TABLE III

The Number of Participants Registered for Academic Credit in Universities and Colleges—1959-60

Institution	*Number Registered*
University of California at Los Angeles	188
Fresno State College	243
Long Beach State College	1
Sacramento State College	208
San Diego State College	93
San Francisco State College	118
University of Maryland	219
Total Registered for Academic Credit	1070

Maryland, Institute for Child Study, several California institutions for higher education also affiliate with the program. Additional co-sponsoring arrangements have been developed by six institutions. About one-half of the members of the study groups are registered for academic credit.

In Table III are listed the colleges and universities and the number of persons who received academic credit, 1959-60, for their work in the Child and Youth Study program.

During the past four years, activities have been developed in addition

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An Unstructured Approach To a Teacher Attitude Investigation

MICHAEL E. DIPIETRO

The Board of Trustees of a school district in Los Angeles County requested the Los Angeles County Office to survey the attitudes of the certificated personnel toward the district. The purposes of the study were threefold: (1) To help the school district identify aspects of the educational program and working conditions which are most appreciated by the certificated staff; (2) To identify topics that might be considered for further improvement; and (3) To provide information which would contribute to the maintenance of gains and advantages already made by the district.

A survey team composed of four members of the Los Angeles County Division of Research and Guidance conducted the survey according to the following procedure:

1. An unstructured question technique was utilized to provide the greatest opportunity for all respondents to indicate their appreciations and concerns.

2. The responses of individuals were protected by complete anonymity.

3. For the purposes of planning and implementation, identification of personnel in relation to the length of service in public education and in the district, as well as the building assignment, was made.

4. The original written responses were seen by no one but the survey team from the County Office.

5. The summarization of responses was made by common content categories and deleted any names or personal identifications which destroyed anonymity.

6. The summarization and report of the survey was made to all certificated personnel in the district. A supplementary and more detailed report was provided to the Board of Trustees, Superintendent, Assistant

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Michael DiPietro has served the Los Angeles County Schools as consultant in administrative research for eleven years. Formerly a junior high school teacher and vice-principal, Dr. DiPietro obtained his doctor of education degree from the school of Education, New York University, in 1948.

Superintendent (Education), and Director of Personnel.[1]

The District Superintendent of Schools sent an announcement to all staff members regarding the forthcoming survey, and on February 5, 1959, all certificated personnel of the school district were requested to participate. A sheet with the following two open-ended questions was provided for individuals to respond anonymously:

1. **What do you appreciate about working in this school district?**
2. **What do you believe needs improvement in this school district?**

Observations Concerning Responses

No further suggestions were made to the respondents as to how they should react; thus, the responses may be looked upon as the spontaneous concerns of the respondents. In this light, it was suggested that if a particular situation or attitude was not reported, such an omission could be an indication that the respondents either were not sufficiently concerned or did not have this matter "on the top of their minds."

As anticipated, the responses were both numerous and varied. The number and thoroughness of the replies evidenced a very conscientious attitude toward the survey. While the responses ranged from terse to lengthy, an average of eleven responses per person concerning appreciations and concerns was given. As a result, it was assumed that in any instance in which ten or more people identified the same topic, such topic was one of common attitude or feeling. Contrastingly, in a structured questionnaire one would anticipate that each individual would answer every question of the yes-no or agree-disagree variety.

Classification of Responses

The agreements concerning anonymity were strictly carried out. Three hundred and ninety individuals from 18 schools and the district office responded to the questionnaire, and the original written responses were seen, read, classified, and destroyed by the survey team so that no person or district would have access to them. The analysis yielded a total of 4,193 responses involving some 254 different topics, which were grouped under 22 classifications with sub-classifications under each. The report of responses was not made in any manner except by items within the 22 categories; verbatim individual responses were not used. The following are the classifications of the teacher attitudes:

[1]Because of the confidential nature of this survey, copies of the report are not available for distribution or examination.

1. **Academic freedom**
2. **Administration**
3. **Advancement opportunity**
4. **Community**
5. **Educational procedures**
6. **Equipment**
7. **Evaluation procedures**
8. **Finance**
9. **Handbooks**
10. **Institutes**
11. **Articulation**
12. **Leadership**
13. **Non-certificated staff**
14. **Organization**
15. **Program**
16. **Psychological climate**
17. **Staff and faculty**
18. **Students**
19. **Supplies**
20. **Workload**
21. **Working conditions (physical)**
22. **Miscellaneous**

Interpretation of Results

Some guidelines for considering the results of this survey were offered to the recipients:

1. The items and reactions given by the respondents in this survey should be viewed as indications of appreciations and concerns at the time of the survey. Responses and attitudes reflected may be expected to change or be altered by subsequent events or circumstances occurring near the time of a survey.

2. The categories and items do not necessarily have precise meaning for any individual, since many persons wrote about these topics in a variety of ways. The items indicate topics or areas of study, rather than specific items of common definition by all respondents.

3. It is inadvisable to infer causation from the pattern of responses of such a survey. It may be appropriate to develop questions or hypotheses for study.

4. Very few items can be studied without considering other item responses of the survey. In some instances two items directly contradict each other, and, in other cases, they will supplement each other. Considering one item in isolation might promote a hasty and unfounded conclusion.

5. Items of low numerical response are not necessarily unimportant.

6. The summarization of this survey combined the responses of persons with varied assignments (e.g., teachers, principals, nurses, counselors, and consultants).

In addition, the following recommendations were offered to the district:

1. There were opposed reactions to a majority of the items in the survey. Such diversity of opinions suggests the importance of further consideration prior to any conclusions regarding continuance, modification, or discontinuance of any practice.

2. It was strongly recommended that further consideration be undertaken through cross-sectional committees representative of persons from all types of assignment and responsibility.

Value of Unstructured Survey

The findings presented in the report offer a challenge and an opportunity for district personnel to consider means of implementing and extending the sources of appreciation, as well as defining and studying areas for improvement. A study of this type has many advantages and disadvantages compared to a structured questionnaire.

Although an unstructured approach was used, there should be no inference that this procedure is felt to be the only one or the best one to be used in all similar survey situations. It is a valid approach with certain strong features as well as some weaknesses.

As a result of this survey, there was developed a basis for classification and, subsequently, a structured teacher-attitude evaluation instrument. The sequence of developing a structured instrument from an unstructured survey yields a relatively comprehensive and reliable attitudinal classification system.

Educable Mentally Retarded . . .

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classes are divided in terms of primary, intermediate, and upper-age groups. Multiple classes afford the teacher an opportunity to present a richer curricular program to a more restricted chronological age group. This also is true at the high school level and it frequently serves to strengthen the curriculum. It has advantages when the teachers at the elementary and secondary levels are counseling the students. It often affords the student a better classroom climate for personal growth and adjustment when he is in class with children who are close to him chronologically.

Implications from decreasing classes in secondary schools; variation and questionable practices of certificates and diplomas; and the diversity of ranges of mental abilities indicate that there are still a variety of problems that need to be resolved in the area of mental retardation in order that the special training program may be improved and strengthened.

Age-Grade Relationships 1929, 1933, 1937, 1946, and 1958

Jerry Craig Garlock

Educators frequently ask, "How are we doing compared to, say, 25 years ago?" Questions of this type are exceedingly difficult to answer in connection with education because of changes in practices, goals, and methods, as well as changes in evaluative instruments and techniques. There are a few areas of educational endeavor in which the problem of comparing conditions over a period of years is possible. The present study is concerned with one of these areas. It has investigated age-grade relationships over a 30-year period.

Age-grade relationships are of constant concern to educators. Due to the many changes which affect this relationship, studies must of necessity be repeated periodically. While the present study is restricted to grades four through eight, a subsequent study, currently in progress, is an investigation of grades eight through twelve.

Background of Study

The Los Angeles County Superintendent of Schools Office has conducted such studies in other years. The first study was undertaken in 1929, followed by others in 1933, 1937, and 1946. The most recent investigation was conducted on data from the fall of 1958. All five surveys were made from typical and representative school districts in Los Angeles County. From these data it was possible to present the age-grade status of pupils for each of the years studied and to determine trends of pupil placement.

The first three of this series of age-grade investigations were conducted independently from one another since there was no apparent attempt to utilize the same investigative procedures. Because of this complication, comparisons of age-grade relations among various years could not be made readily.

Another complication had to do with the change of entering age in the first grade. In 1951 the legislature (California Education Code 8503) changed the entering age of children to the first grade from a minimum age of five years six months on the first day of September to a minimum of five years nine months on September 1. Thus, any comparison of studies of

age-grade conducted before 1951 with studies conducted after 1951 must take this change into account.

It should also be noted that the 1951 change in entering age did not affect all grades at that time, but only affected age-grade relationships at the rate of one grade per year. Thus, in 1951 first grade relations would be affected, in 1952 second grade relations, as well as first grade relations would be affected, and so on through the years and the grades. Promotion and retention would have only slight effects on those grades adjacent to grades of "change" years. This latter effect, however, is slight and perhaps needs only to be mentioned.

Any comparison of 1958 age-grade studies with age-grade studies conducted prior to 1951, therefore, includes two comparisons: (1) those based on an entering age of five years six months, called an "absolute" comparison, and (2) those based on five years nine months entering age, called a "relative" comparison. The term absolute, here, implies a comparison of age for any given grade that is independent of the change in entering age. An absolute 1958 comparison would not be a true comparison for at least some grades (until 1963 and no grade after 1963). The term "relative" takes the "shift" of entering age into account. For those grades where the "shift" has applied, a comparison between studies conducted prior to 1951 and those conducted after 1951 should use the "relative" comparison.

Thus, in order for age-grade relationships to be comparable to studies made before 1951 and those made after 1951, the three months difference in entering age must be taken into account for those grades which are affected by this shift (the seventh grade being the grade shift for the year 1958).

It is also noted that the previous studies investigated different aspects of the age-grade problem. For example, unlike the present study, the 1946 study classified districts according to: (1) size, (2) whether a rural or urban district, and (3) type of promotional policy of the district. With regard to these three areas the present investigators felt that: (1) district variations in age-grade relationships should not be part of the 1958 study since the investigation was to be normative in nature; (2) since there are relatively few "rural" areas left in Los Angeles County, the rural-urban element was not investigated in the current study; and (3) since all districts in Los Angeles County (except one) have annual promotion, only annual promotional districts were investigated.[1]

[1]Although a simple analysis of variance investigating the 1946 age distributions indicated that there was a greater age difference among districts than within them, a further study revealed that the differences were not significant when the one, two, or three teacher schools were not included in the analysis. Since these small schools are now practically extinct in Los Angeles County, age-grade relationships due to size of district were not deemed worthy of investigation in the present study.

The 1958 study was composed of 32 districts involving from 6,649 to 11,236 pupils in each grade from the fourth to the eighth.

The purposes of the present investigation were to:

1. Indicate the status of age-grade relationships of a large sample of children in grades four through eight in Los Angeles County.
2. Compare age-grade relationships among the 1958 study and previous studies.

Data Analyzed

It is well known that over the years the age-grade relationship has indicated that for any given grade, age is becoming more homogeneous. Table I, in addition to yielding trends, gives some definitive magnitudinal values. For example, it is interesting to note that the age range around the middle of the distribution (from 11 to 12 months) included about 50 per cent of the 1937 population, whereas approximately the same age range included about 80 per cent of the 1958 population.

An analysis of the 1958 data as presented in Table I indicates the following:

1. The variability among grades 4, 5, 6, 7, and 8 is similar although

TABLE I

Age Data of Central Tendency and Variability of Grades 4, 5, 6, 7, and 8 for the Years 1937, 1946, and 1958

Year	*Grade*	*N*	*Median (Yrs. & Mos.)*	*Mean (Yrs. & Mos.)*	*SD (Mo.)*	Q_3-Q_1 *(Mo.)*	P_{90}-P_{10} *(Mo.)*	P_{90}-P_5 *(Mo.)*
1937	4	4,624	9-6.6	9-8.4	10.3	11.6	23.4	31.0
	5	4,701	10-6.8	10-8.9	11.3	13.0	26.6	35.8
	6	5,055	11-6.6	11-8.5	10.9	13.0	25.9	35.0
	7	4,066	12-6.7	12-8.8	11.4	13.9	28.5	36.9
	8	3,936	13-6.3	13-8.2	10.8	13.3	27.3	35.0
1946	4	9,878	9-3.7	9-4.9	8.2	9.6	20.0	25.8
	5	9,197	10-3.5	10-5.3	8.4	10.7	20.5	26.4
	6	8,893	11-4.0	11-4.7	8.4	10.5	20.5	26.1
	7	4,628	12-3.9	12-5.3	9.1	11.5	21.0	28.8
	8	4,541	13-4.3	13-5.3	9.1	11.7	23.2	30.3
1958	4	11,236	9-4.7	9-6.1	5.5	6.7	11.1	15.5
	5	9,752	10-5.0	10-5.2	5.8	6.9	12.5	17.1
	6	9,224	11-4.1	11-3.8	5.6	6.1	11.6	15.8
	7	8,647	12-2.2	12-3.2	6.2	6.7	13.1	18.7
	8	6,649	13-3.0	13-3.6	6.1	6.8	13.9	19.3

there is a definite tendency for greater heterogeneity with an increase in grade.

2. The mean ages in grades four through eight are, respectively, 9 years 5 months, 10 years 5 months, 11 years 4 months, 12 years 2 months, and 13 years 3 months. The mean ages were within 1.4 months of the median and generally larger than the median, indicating a slight positive skewness.
3. There is a tendency for the mean age to increase an amount slightly less than a full year for each increase in grade level.
4. The middle 50 per cent of any given grade is contained in a six to seven month grade interval while the middle 80 per cent is contained in a one year interval plus or minus two months. (The interval becoming larger with an increase in grade.)
5. The middle 90 per cent of the population is included in approximately a year and a half span.

A comparison of the 1937, 1946, and 1958 studies as given in Table I indicates the following:

1. It can be said, generally, that for each grade there is a decrease in median age from 1937 to 1946 and also from 1946 to 1958. The mean ages do not adhere as strictly to this pattern.
2. When comparing the various presentations of variability between 1937 and 1958, it is evident that the S.D., $Q_3 - Q_1$, $P_{90} - P_{10}$, and $P_{95} - P_5$ values are approximately twice as large in 1937 as in 1958. This tendency holds true for each grade level.
3. The values for the S.D., $Q_3 - Q_1$, $P_{90} - P_{10}$, and $P_{95} - P_5$ of the 1946 data are between the 1937 and the 1958 values, but tend to be closer to the 1937 values.

Table II presents 1929, 1933, 1937, 1946, and 1958 age data for the grades previously mentioned according to age classifications. These classifications are "normal," "over-age," and "under-age" as defined by a 1929 criterion. The "normal" fourth grade range is from 8 years 9 months to 9 years 8 months, "normal" for the fifth grade is 9 years 9 months to 10 years 8 months, and so on. "Over-age" is, of course, any age over the normal range and "under-age" is any age under the normal range.

An analysis of the data presented in Table II indicates the following:

1. For each grade, the trend is for a greater per cent of the population to be in the normal classification for each subsequent study.
2. There is a general tendency for any year to have a decrease in percentage of "normals" as grades increase.

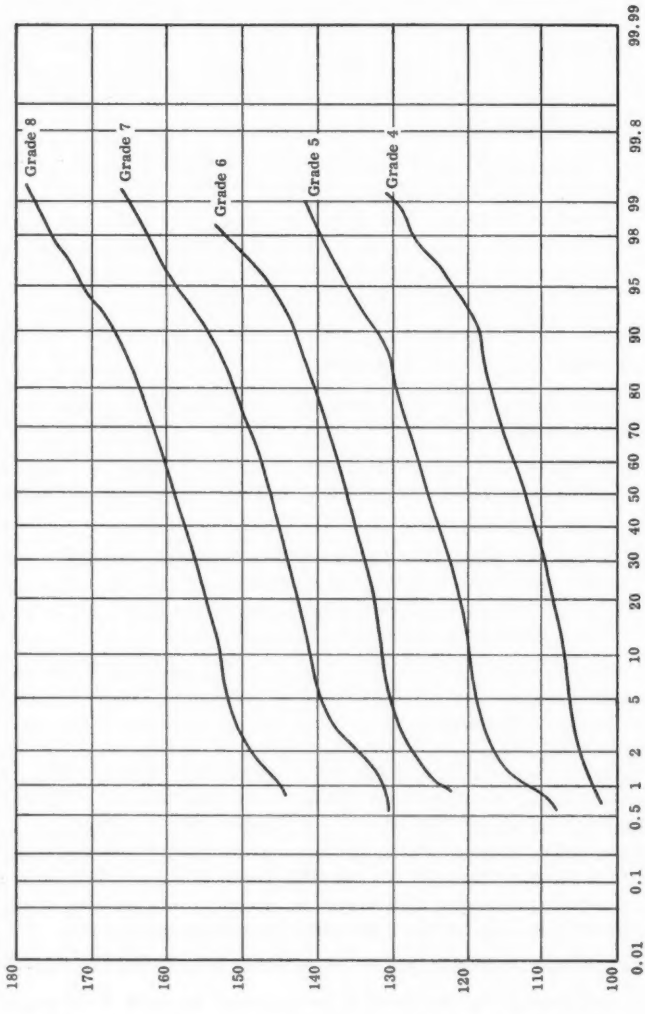

Figure 1. Cumulative Percentile Frequency Distributions of Chronological Ages for Grades 4, 5, 6, 7, and 8

3. When using the 1958 relative comparison for grades 4, 5, and 6 and the absolute comparison for grades 7 and 8, it is seen that at least 75 per cent of the pupils are in the normal classification; no more than 17 per cent are over-age; and no more than 13 per cent are under-age. This analysis is a generalization which applies to each of the grades four through eight.
4. In most grades, the over-age group in 1958 has decreased to one-third or less of what it was in 1929.
5. Of the three classifications, the under-age group has changed the least in percentage from 1929 to 1958.

TABLE II

Distributions by Per Cent of Normal, Over-Age, and Under-Age Pupils by Grades for Five Years

Grade	*Classification*	*Year* 1929	1933	1937	1946	1958 *Absolute*	1958 *Relative*
	Normal	53.0	56.7	58.7	63.6	77.3	80.9
4	Over-age	37.0	35.4	35.0	25.9	21.4	7.1
	Under-age	10.0	7.9	6.3	10.6	1.3	12.1
	Normal	47.0	53.7	54.6	61.6	74.2	79.2
5	Over-age	41.0	37.3	36.8	28.6	23.8	9.9
	Under-age	12.0	9.0	8.6	9.9	2.0	10.9
	Normal	48.0	51.3	53.7	61.2	79.9	79.3
6	Over-age	40.0	37.7	37.2	28.0	17.6	8.2
	Under-age	12.0	11.0	9.1	10.8	2.6	12.5
	Normal	43.0	49.9	52.7	58.0	78.2	65.7
7	Over-age	43.0	38.5	37.9	29.5	14.3	8.5
	Under-age	14.0	11.6	9.4	12.5	7.5	25.8
	Normal	43.0	48.5	52.9	56.1	76.0	67.1
8	Over-age	41.0	37.7	37.0	30.5	16.3	9.1
	Under-age	16.0	13.8	10.1	13.4	7.7	23.9

Conclusions of Study

Age-grade relationships change sufficiently over the years to warrant continued investigations of this problem. The information is not strictly academic but has applications in administrative matters, guidance problems, test norming and so on. Over the years, differences of ages in central tendency are not as impressive as differences in variability.

It is concluded that arbitrary classifications in studies of this type do

not lend themselves to a wide variety of comparisons as do more general ways of presenting data. For example, a cumulative frequency of the 1958 data is shown in Figure I. From this an analysis can easily be made from either a per cent criterion or an age criterion. It is generalized procedures of this type that allow future investigators the freedom to compare their studies with previous ones on bases which are appropriate at the time.

Child and Youth Study Programs . . .

(Continued from page 181)

to the regular program. Workshops have been conducted for superintendents and their assistants focusing upon the implications of recent research findings for educational planning and organization. Workshops for secondary school administrators, deans, and counselors have used Youth Study procedures to consider problems of adolescents and secondary school services. School districts have sent guidance, health, child welfare, administrative, and curriculum representatives to workshops designed to promote a greater teamwork approach to the understanding and the improvement of educational processes.

Through these many types of Child and Youth Study activities, along with regular study group meetings, school districts are being assisted in using to a greater extent effective research methods and knowledge in the continuous development of excellent schools for children and youth.

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